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09/646,665	11/27/2000	Masaaki Higashida	MAT-8014US	5725

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EXAMINER
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MILLS, DONALD L

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/646,665

Applicant(s)

HIGASHIDA ET AL.

Examiner

Donald L. Mills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-16 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/06/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

In view of the Appeal Brief filed on 30 January 2006, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 8-10, and 12-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujimoto et al. (US 6,191,903 B1), hereinafter referred to as Fujimoto.

Regarding claims 1 and 14, Fujimoto discloses a recording medium, data transmission apparatus, data receiver and optical disk unit for the transmission of video and other data, which comprises:

*Generating (Claim 1)/Means for generating (Claim14) a fixed pattern comprising 'm' words (Referring to Figure 3, bytes 1 and 2.)*

*Generating (Claim 1)/Means for generating (Claim14) variable, non-random patterns of predetermined bit structure, each pattern comprising 'n' words (Referring to Figure 3, bytes 3 and 4.)*

*Generating (Claim 1)/Means for generating (Claim14) sync patterns comprising 'q' words, each of the sync patterns formed by combining the fixed pattern and one of the variable patterns (Referring to Figure 3, the synchronization patterns SY0 to SY7 are assigned logical patterns of data comprising a fixed and variable portion; therefore, comprising different composite patterns. See column 5, lines 33-38.)*

*Adding one of said sync patterns to each of said data packets in a data stream, wherein consecutive ones of said data packets each have added respectively different variable patterns (Referring to Figures 3 and 4, no identical combination of synchronization patterns occurs among contiguous sync frames. See column 5, lines 45-50.)*

Regarding claim 2, Fujimoto discloses *wherein the variable pattern comprises a plurality of words, and the variable patterns are made by changing an order of the words (Referring to Figure 3, the synchronization patterns SY0 to SY7 are assigned logical patterns of data*

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comprising a variable portion (bytes 3 and 4) comprised of different composite patterns. See column 5, lines 33-38.)

Regarding claim 8, Fujimoto discloses *the packet data as a digital video signal* (Referring to Figures 2 and 3, the data is digital audio and video. See column 4, lines 54-58.)

Regarding claim 9, Fujimoto discloses *the digital video signal as a compressed signal* (Referring to Figures 2 and 3, the data is formatted MPEG data (compressed). See column 4, lines 54-58.)

Regarding claim 10, Fujimoto discloses *the compressed signal as a DIF stream* (Referring to Figures 2 and 3, the data is a formatted MPEG data stream (compressed). See column 4, lines 54-58.)

Regarding claim 12, the primary reference further teaches *the method including a step of detecting a sync* (Referring to Figures 2-4, the memory 8 can locate a sync frame by two contiguous synchronization patterns. See column 5, lines 54-56.)

Regarding claims 13 and 15, the primary reference further teaches comprising:

*Detecting (Claim 13)/Means for detecting (Claim 15) a sync for examining both of a fixed pattern and a variable pattern of a data received* (Referring to Figures 2 and 3, the synchronization pattern is detected to identify the data packet. See column 7, lines 44-47.)

*Securing (Claim 13)/Means for securing (Claim 15) a sync for examining only the fixed pattern* (Referring to Figures 2 and 3, during synchronization the synchronization pattern is inherently examined individually in order to determine the value of each bit.)

*Wherein step (a) processes the data until the sync is secured and step (b) processes the data after the sync is secured* (Referring to Figures 2-4, when correctly detecting contiguous

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synchronization patterns, the frame number decoder 31 detects a sync frame number equal to the count value of the frame counter 32 and controls the frame counter 32 so as to output a frame number based on the detected number. See column 7, lines 61-65.)

Regarding claim 16, the primary reference further teaches *adding a transmission header of 's \* k' words, wherein the transmission header is divided into 'k' pieces of blocks at intervals of every 's' word* (Referring to Figures 2 and 3, the packet comprises an ID which is encoded by ID encoding section 7,) and, *each transmission header includes the fixed pattern of 'm' words at a top thereof* (Referring to Figure 3, bytes 1 and 2,) *the fixed pattern employs a pattern other than patterns used in the block header* (Referring to Figure 2 and 3, the fixed pattern and the ID are distinct.)

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al. (US 6,191,903 B1), hereinafter referred to as Fujimoto.

Regarding claim 3 as explained above in the rejection statement of claim 1, Fujimoto discloses all of the claim limitations of claim 1 (parent claim).

Fujimoto does not disclose *wherein the fixed pattern comprises three words*.

Fujimoto teaches, referring to Figure 3, the synchronization patterns **SY0** to **SY7** are assigned logical patterns of data comprising a fixed portion (bytes 1 and 2) comprised of two fixed bytes (words) (See column 5, lines 33-38.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement additional bits in the synchronization pattern Fujimoto. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to provide synchronization in error prone sectors, thereby, providing greater error correction capability.

Regarding claim 4 as explained above in the rejection statement of claim 1, Fujimoto discloses all of the claim limitations of claim 1 (parent claim).

Fujimoto does not disclose *wherein the three words include 'eb', 'cb' and 'aa', expressed in a hexadecimal notation.*

Fujimoto teaches, referring to Figure 3, the synchronization patterns **SY0** to **SY7** are assigned logical patterns of data comprising a fixed portion (bytes 1 and 2) comprised of two fixed bytes (words) (See column 5, lines 33-38.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine three different arbitrary fixed patterns in the synchronization pattern of Fujimoto. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to provide synchronization in error prone sectors, thereby, providing greater error correction capability.

Regarding claim 5 as explained above in the rejection statement of claim 1, Fujimoto discloses all of the claim limitations of claim 1 (parent claim).

Fujimoto does not disclose *wherein the variable pattern comprises five words.*

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Fujimoto teaches the synchronization patterns SY0 to SY7 are assigned logical patterns of data comprising a variable portion (bytes 3 and 4), two bytes, comprised of different composite patterns. (See column 5, lines 33-38.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to increase the length of the synchronization pattern to comprise five words in the system of Fujimoto. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to provide synchronization in error prone sectors, thereby, providing greater error correction capability.

Regarding claim 6 as explained above in the rejection statement of claim 1, Fujimoto discloses all of the claim limitations of claim 1 (parent claim).

Fujimoto does not disclose *wherein the five words include '4c', 'ea', 'cd', '7a' and '81', expressed in a hexadecimal notation.*

Fujimoto teaches the synchronization patterns SY0 to SY7 are assigned logical patterns of data comprising a variable portion (bytes 3 and 4), two bytes, comprised of different composite patterns (See column 5, lines 33-38.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to increase the length of the synchronization pattern to comprise five arbitrary words in the system of Fujimoto. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to provide synchronization in error prone sectors, thereby, providing greater error correction capability.



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5. Claims 1-6 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,289,476), hereinafter referred to as Johnson.

Regarding claims 1 and 14, Johnson discloses transmission mode detection in a modulated communication system, which comprises:

*Generating (Claim 1)/Means for generating (Claim14) a fixed pattern comprising 'm' words (Referring to Figure 6A, bit sync 610 comprised of 8-bits.)*

*Generating (Claim 1)/Means for generating (Claim14) variable, non-random patterns of predetermined bit structure, each pattern comprising 'n' words (Referring to Figure 6A, word sync 611 comprised of 7-bits representing one of two states, either BPSK or QPSK. See column 10, lines 13-15.)*

*Generating (Claim 1)/Means for generating (Claim14) sync patterns comprising 'q' words, each of the sync patterns formed by combining the fixed pattern and one of the variable patterns (Referring to Figure 6A, the preamble comprises bit sync 610 and word sync 611.)*

Johnson does not disclose *adding one of said sync patterns to each of said data packets in a data stream, wherein consecutive ones of said data packets each have added respectively different variable patterns.*

However, Johnson teaches that the transmitter sends data packets using either BPSK or QPSK on a packet-by-packet basis by generating the appropriate word sync pattern for each packet, thereby, making a bit structure in which includes different word syncs (See column 10, lines 18-21.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement BPSK and QPSK in consecutive packets resulting in a different sync patterns in the

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system of Johnson. One of ordinary skill in the art would have been motivated to do so in order to robustly transmit communication signals during noisy periods (BPSK) followed by higher data transmission during a consecutive period of lower impairment (QPSK) in an alternating style as taught by Johnson (See column 1, lines 40-45.)

Regarding claim 2, the primary reference further teaches *wherein the variable pattern comprises a plurality of words, and the variable patterns are made by changing an order of the words* (Referring to Figure 6A, word sync 611 comprised of 7-bits representing one of two states, either BPSK or QPSK. See column 10, lines 13-15.)

Regarding claim 3 as explained above in the rejection statement of claim 1, Johnson discloses all of the claim limitations of claim 1 (parent claim). \

Johnson does not disclose *wherein the fixed pattern comprises three words*.

Johnson teaches bit sync 610 comprised of 8-bits (See Figure 6A.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement additional bits in the bit sync preamble data packet of Johnson. One of ordinary skill in the art would have been motivated to do so in order to provide synchronization in highly congested and interference prone areas.

Regarding claim 4 as explained above in the rejection statement of claim 1, Johnson discloses all of the claim limitations of claim 1 (parent claim).

Johnson does not disclose *wherein the three words include 'eb', 'cb' and 'aa', expressed in a hexadecimal notation*.

Johnson teaches a word sync 611 comprised of 7-bits representing one of two states, either BPSK or QPSK (See column 10, lines 13-15.)

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine three different fixed patterns in the synchronization preamble of Johnson. One of ordinary skill in the art would have been motivated to do so in order to provide synchronization in highly congested and interference prone areas.

Regarding claim 5 as explained above in the rejection statement of claim 1, Johnson discloses all of the claim limitations of claim 1 (parent claim).

Johnson does not disclose *wherein the variable pattern comprises five words*.

Johnson teaches a word sync 611 comprised of 7-bits representing one of two states, either BPSK or QPSK (See column 10, lines 13-15.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to increase the length of the word sync to comprise five words. One of ordinary skill in the art would have been motivated to do so in order to provide synchronization in highly congested and interference prone areas.

Regarding claim 6 as explained above in the rejection statement of claim 1, Johnson discloses all of the claim limitations of claim 1 (parent claim).

Johnson does not disclose *wherein the five words include '4c', 'ea', 'cd', '7a' and '81', expressed in a hexadecimal notation*.

Johnson teaches a word sync 611 comprised of 7-bits representing one of two states, either BPSK or QPSK (See column 10, lines 13-15.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine five different fixed patterns in the synchronization preamble of Johnson.

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One of ordinary skill in the art would have been motivated to do so in order to provide synchronization in highly congested and interference prone areas.

Regarding claim 12, the primary reference further teaches *the method including a step of detecting a sync* (Referring to Figure 2, the preamble is detected to identify the beginning of a data packet. See column 7, lines 58-61.)

Regarding claims 13 and 15, the primary reference further teaches comprising:

*Detecting (Claim 13)/Means for detecting (Claim 15) a sync for examining both of a fixed pattern and a variable pattern of a data received* (Referring to Figure 2, the preamble is detected to identify the beginning of a data packet, the preamble comprises the bit sync and word sync. See column 7, lines 58-61.)

*Securing (Claim 13)/Means for securing (Claim 15) a sync for examining only the fixed pattern* (Referring to Figure 2, during synchronization the bit sync is inherently examined individually in order to determine the value of each bit.)

*Wherein step (a) processes the data until the sync is secured and step (b) processes the data after the sync is secured* (Referring to Figures 2 and 6A, the preamble detector process the data packet while determining synchronization and then process the data packet. See column 7, lines 58-61.)

Regarding claim 16, the primary reference further teaches *adding a transmission header of 's \* k' words, wherein the transmission header is divided into 'k' pieces of blocks at intervals of every 's' word* (Referring to Figure 2, the preamble comprises a carrier detect interval and a carrier sync interval, each comprised of bits. See column 7, lines 55-57.) And, *each transmission header includes the fixed pattern of 'm' words at a top thereof* (Referring to Figure

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2, carrier detect interval,) *the fixed pattern employs a pattern other than patterns used in the block header* (Referring to Figure 2, the carrier detect interval is different from the carrier sync interval.)

6. Claims 8-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,289,476), hereinafter referred to as Johnson, in view of Lawrence et al. (US 6,208,666 B1), hereinafter referred to as Lawrence.

Regarding claim 8 as explained above in the rejection statement of claim 1, Johnson discloses all of the claim limitations of claim 1 (parent claim).

Johnson does not disclose *wherein the packet data is a digital video signal*.

Lawrence teaches system and method for maintaining timing synchronization in a digital video network where digital video enters customer premises **1300** from central office **400** via a wireless communication channel **16** (See Figure 16, column 22, lines 8-9 and 16.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement synchronization preamble of Johnson in the system of Lawrence. One of ordinary skill in the art would have been motivated to so in order to utilize power lines for the transmission and reception of video data.

Regarding claim 9 as explained above in the rejection statement of claim 1, Johnson discloses all of the claim limitations of claim 1 (parent claim).

Johnson does not disclose *wherein the digital video signal is a compressed signal*.

Lawrence teaches system and method for maintaining timing synchronization in a digital video network where compressed digital video enters customer premises **1300** from central

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office 400 via a wireless communication channel 16 (See Figure 16, column 22, lines 8-9 and 15-16.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement synchronization preamble of Johnson in the system of Lawrence. One of ordinary skill in the art would have been motivated to so in order to utilize power lines for the transmission and reception of video data.

Regarding claim 10 as explained above in the rejection statement of claim 1, Johnson discloses all of the claim limitations of claim 1 (parent claim).

Johnson does not disclose *wherein the compressed signal is a DIF stream*.

Lawrence teaches system and method for maintaining timing synchronization in a digital video network where compressed digital video stream enters customer premises 1300 from central office 400 via a wireless communication channel 16 (See Figure 16, column 22, lines 8-9 and 15-16.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement synchronization preamble of Johnson in the system of Lawrence. One of ordinary skill in the art would have been motivated to so in order to utilize power lines for the transmission and reception of video data and support digital playback devices for video-on-demand services.

Regarding claim 11 as explained above in the rejection statement of claim 1, Johnson discloses all of the claim limitations of claim 1 (parent claim).

Johnson does not disclose *wherein the packet data is transmitted through an ATM transmission line*.

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Lawrence teaches system and method for maintaining timing synchronization in a digital video network where communication is performed over connection 112 with ATM switch 102 (See Figure 4, column 7, lines 26-27.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement synchronization preamble of Johnson in the system of Lawrence. One of ordinary skill in the art would have been motivated to so in order to utilize power lines for the transmission and reception of video data for Internet traffic.

***Allowable Subject Matter***

7. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

8. Applicant's arguments with respect to claims 1-6 and 8-16 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Mills whose telephone number is 571-272-3094. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills

*Dem*

May 12, 2006

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